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EXAMINER

DEBROW, JAMES J

ART UNIT

PAPER NUMBER

2176

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/661,320	<b>Applicant(s)</b> ISHIHARA, HIROSHI	
	<b>Examiner</b> JAMES J. DEBROW	<b>Art Unit</b> 2176	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7, 9-49, 51-61, 63-69, 71 and 72 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-49, 51-61, 63-69, 71 and 72 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

This action is responsive to action: RCEX filed 20 Nov. 2008.

Claims 1-7, 9-49, 51-61, 63-69, 71 and 72 are pending in this case. Claims 1, 23, 46, and 58 are independent claims.

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 20 Nov. 2008 has been entered.

### ***Applicant's Response***

In Applicant's response dated 20 Nov. 2008, applicant amended claims 1, 9, 21, 23, 23, 30, 46, 51, 58, 63, 64 and 65; canceled claims 8, 50, 62; argued against rejections previously set forth in previous Office Action.

### ***Claim Objections***

**Claims, 9-15, 51 and 65** are objected to because of the following informalities: the claim status identifier is incorrect. The claim has been amended, therefore the status identifier should be "currently amended". Appropriate correction is required.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

**Claims 1-7 and 9-22** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

**Claims 1-7 and 9-22:**

In summary, Claim 1 recites an “*apparatus*” comprising solely of various computer software units/modules. Thus, the recited invention is computer software *per se*. A computer program is merely a set of instruction capable of being executed by a computer. The computer program itself is not a statutory process in that it does not include the computer-readable medium needed to realize the functionality of the computer program.

Thus, for purposes of examination, the examiner interprets the recited “*apparatus*” to be software *per se*. That is, the recited “*system*” is not a process, a machine, a manufacture or a composition of matter.

Accordingly, Claim 1 fails to recite statutory subject matter as defined in 35 U.S.C. 101.

Claims 2-7 and 9-22 merely recite further functions performed by the various computer software modules making up the “*apparatus*” or characteristics of the various computer software modules making up the “*apparatus*.” Thus, Claims 14-24 do not further define the recited “*apparatus*” as being within a statutory process, machine, manufacture or composition of matter.

Accordingly, Claims 2-7 and 9-22 fail to recite statutory subject matter as defined in 35 U.S.C. 101.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-7, 9-13, 17-35, 39-49, 51, 55-61, 63, 67-69, 71 and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunimasa et al. (Patent No.: 6,456,298 B1; Filed: Aug. 13, 1999) (hereinafter “Kunimasa”) in view of Nagoya (Pat. No.: US 6,281,982 B1; Filed: Jun. 12, 1998).**

**In regard to independent claim 1, Kunimasa discloses *an information processing apparatus comprising:***

***a drawing omission determination unit that determines whether drawing process corresponding to a graphical drawing instruction, out of a plurality of graphical drawing***

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*instructions, can or cannot be omitted based on a drawing attribute of a pattern corresponding to the graphical drawing instruction* (col. 5, lines 14-34; Kunimasa discloses the drawing logical arithmetic process determination unit analyzes the drawing arithmetic process instruction and determines whether the instruction or a plurality of continuous drawing instructions has the content which may be processed without any logical arithmetic process or not. The Examiner relates this teaching to the current invention that the drawing instructions are analyzed to determine if they should be process further or not; col. 10, lines 42-67 & col. 11, lines 1-30; Fig. 7; Kunimasa further discloses a process in which drawing instructions are analyzed to determine if they are identical or not. An second image pattern along with it's drawing instruction is compared to a first image pattern along with it's drawing instruction, which is stored in drawing object memory unit. If the drawing information is determined to be identical, the second drawing information is not output and the process for the second drawing information is completed at this point);

*an output unit that outputs to an information processing apparatus the other graphical drawing instructions to get an image corresponding to the other graphical drawing instructions printed* (col. 6, lines 20-35; 2 in Fig. 21; Kunimasa discloses the interpreter unit which recognizes the drawing information received by the printer to interpret a command by forming command and argument. Based on the instructions of the interpreter unit, the imager unit draws the image.).

*Kunimasa does not disclose expressly a selection unit that makes the graphical drawing instruction invalid if the drawing omission determination unit determines that the drawing process corresponding to the graphical drawing instruction to be made invalid can be omitted, and sets another graphical drawing instruction valid.*

*an output status flag that indicates whether the selection unit has already set a certain graphical drawing instruction valid, and*

*wherein the drawing omission determination unit checks the output status flag and determines whether the drawing process corresponding to the graphical drawing instruction can be omitted based on the state of the output status flag, and ,*

*wherein the graphical drawing instruction is made invalid, the drawing process corresponding to the graphical drawing instruction is not performed.*

However, Nagoya teaches a selection unit that makes the graphical drawing instruction invalid if the drawing omission determination unit determines that the drawing process corresponding to the graphical drawing instruction to be made invalid can be omitted, and sets another graphical drawing instruction valid (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a process that sets a variable flag (status flag) to “1” when it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to “1” indicates the area has already been drawn. Thus the drawing command/instruction is set to invalid and can be omitted.).

*an output status flag that indicates whether the selection unit has already set a certain graphical drawing instruction valid* (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a process that sets a variable flag (status flag) to “1” when it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to “1” indicates the area has already been drawn. Thus the drawing command/instruction is set to invalid and can be omitted.).

*wherein the drawing omission determination unit checks the output status flag and determines whether the drawing process corresponding to the graphical drawing instruction can be omitted based on the state of the output status flag* (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a variable flag (output status flag) that determines whether the drawing process corresponding to the graphical drawing instruction can be omitted based on the state of the variable flag (output status flag). Nagoya teaches a process that sets a variable flag (status flag) to “1” when it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to “1” indicates the area has already been drawn. Thus the drawing command/instruction is set to invalid and can be omitted. Setting the variable flag (status flag) to “0” indicates the area has not already been drawn, thus the drawing command/instruction is set to valid and can not be omitted.).

*wherein the graphical drawing instruction is made invalid, the drawing process corresponding to the graphical drawing instruction is not performed* (col. 1, line 5-col 2,



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line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a process that sets a variable flag (status flag) to “1” when it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to “1” indicates the area has already been drawn. Thus the drawing command/instruction is set to invalid and can be omitted.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 2,** Kunimasa discloses *the information processing apparatus according to claim 1, wherein the graphical drawing instruction is described in a page description language that includes a basic graphical drawing instruction which specifies a pattern to be drawn, and a drawing attribute instruction which specifies the drawing attribute* (col. 13, lines 49-63; Kunimasa discloses the drawing instruction, including set attribute instructions, are presented in a page description language (PDL).) .

**In regard to dependent claim 3,** Kunimasa discloses *the information processing apparatus according to claim 1, wherein the drawing attribute includes information about a color of a pattern concerning the graphical drawing instruction and a method*

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*for performing the drawing process (col. 13, lines 49-67; col. 14, lines 4-9; col. 14, lines 22-36; Kunimasa discloses how the drawing instruction include attribute information concerning the color pattern of the image.).*

**In regard to dependent claim 4,** Kunimasa does not expressly disclose *the information processing apparatus according to claim 3, wherein the drawing omission determination unit determines that the drawing process can be omitted when the drawing attribute of a pattern concerning the graphical drawing instruction does not change the contents of a memory at a drawing destination before and after the drawing process regardless of the contents of the memory.*

However, Nagoya teaches *wherein the drawing omission determination unit determines that the drawing process can be omitted when the drawing attribute of a pattern concerning the graphical drawing instruction does not change the contents of a memory at a drawing destination before and after the drawing process regardless of the contents of the memory* (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a process that sets a variable flag (status flag) to “1” when it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to “1” indicates the area has already been drawn, wherein the drawing command/instruction is set to invalid and can be omitted and the output is performed without any changed attribute. Thus the drawing instruction does not change the contents of a memory at a drawing destination before and after the drawing process regardless of the contents of the memory. A variable flag

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(status flag) set to "0" indicates the area has not already been drawn, thus the drawing command/instruction is set to valid wherein the output is performed with changed attributes and can not be omitted.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 5,** Kunimasa does not expressly disclose *the information processing apparatus according to claim 4, wherein the drawing omission determination unit determines that the drawing process can be omitted when it is determined from the drawing attribute of a pattern concerning the graphical drawing instruction and a method for performing the drawing process that the contents of a memory at a drawing destination are not changed before and after the drawing process regardless of the contents of the memory.*

However, Nagoya teaches *wherein the drawing omission determination unit determines that the drawing process can be omitted when it is determined from the drawing attribute of a pattern concerning the graphical drawing instruction and a method for performing the drawing process that the contents of a memory at a drawing destination are not changed before and after the drawing process regardless of the contents of the memory* (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a process that sets a variable flag (status flag) to "1" when

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it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to "1" indicates the area has already been drawn, wherein the drawing command/instruction is set to invalid and can be omitted and the output is performed without any changed attribute. Thus the drawing instruction does not change the contents of a memory at a drawing destination before and after the drawing process regardless of the contents of the memory. A variable flag (status flag) set to "0" indicates the area has not already been drawn, thus the drawing command/instruction is set to valid and can not be omitted wherein the output is performed with changed attributes.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 6**, Kunimasa does not expressly disclose *the information processing apparatus according to claim 5, wherein the drawing determination unit determines that the drawing process can be omitted when the color density is the lowest and also when the method is a logical sum (OR) among the drawing attributes of a pattern concerning the graphical drawing instruction.*

However, Nagoya teaches *the drawing determination unit determines that the drawing process can be omitted when the color density is the lowest and also when the method is a logical sum (OR) among the drawing attributes of a pattern concerning the*

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*graphical drawing instruction* (col. 5, line 58-col. 6, line 50; Nagoya teaches judgment is made whether or not the variable flag is “0” wherein the application does not overlap what has already been drawn, so the relevant area is white. Nagoya also teaches representation can be made with brightness, wherein the “white’ color density is set to “1”. However further Nagoya teaches representation can be made with brightness, wherein the “white’ color density is set to “1”. Nagoya further teaches logic drawing attributes of “OR”, “AND” and “XOR” which is used to change or not change a drawing attribute. At the time of the invention it would have been obvious to one of ordinary skill in the art to use or modify Nagoya teachings to provide a process that determines that the drawing process can be omitted when the color density is the lowest and also when the method is a logical sum (OR) among the drawing attributes of a pattern concerning the graphical drawing instruction.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 7,** Kunimasa does not expressly disclose *the information processing apparatus according to claim 1, wherein the drawing omission determination unit determines that the drawing process can be omitted when a memory at a drawing destination is in an initialized state.*

However, Nagoya teaches *wherein the drawing omission determination unit determines that the drawing process can be omitted when a memory at a drawing destination is in an initialized state* (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a process that sets a variable flag (status flag) to “1” when it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to “1” indicates the area has already been drawn. Thus the drawing command/instruction is set to invalid and can be omitted.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 9,** Kunimasa discloses *the drawing attribute of a pattern concerning the graphical drawing instruction does not change the contents of a memory at a drawing destination before and after the drawing process when the memory is in an initialized state even when the drawing process is carried out* (col. 10, lines 42-67 & col. 11, lines 1-30; Fig. 7; Kunimasa discloses a process in which drawing instructions are analyzed to determine if they are identical or not. An second image pattern along with it's drawing instruction is compared to a first image pattern along with it's drawing instruction, which is stored in drawing object memory unit. If the drawing information is determined to be identical, the second drawing information is not output and the process for the second drawing information is completed at this point.).

Kunimasa does not disclose expressly *the information processing apparatus according to claim 8, wherein the drawing omission determination unit determines that the drawing process can be omitted when the output status flag indicates that the graphical drawing instruction is not yet set valid.*

However, Nagoya teaches *wherein the drawing omission determination unit determines that the drawing process can be omitted when the output status flag indicates that the graphical drawing instruction is not yet set valid* (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a variable flag (output status flag) that determines whether the drawing process corresponding to the graphical drawing instruction can be omitted based on the state of the variable flag (output status flag). Nagoya teaches a process that sets a variable flag (status flag) to “1” when it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to “1” indicates the area has already been drawn. Thus the drawing command/instruction is set to invalid and can be omitted. Setting the A variable flag (status flag) set to “0” indicates the area has not already been drawn, thus the drawing command/instruction is set to valid wherein the output is performed with changed attributes and can not be omitted.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process

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wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1)

**In regard to dependent claim 10**, Kunimasa discloses *the information processing apparatus according to claim 8, when the color density is the lowest and also when a method for performing the drawing process is a replacement (SET) among the drawing attributes of a pattern concerning the graphical drawing instruction* (col. 15, lines 56-65; col. 18, lines 3-11; Kunimasa discloses over-writing (*replacement (SET)*) the image when the color value is zero (*color density is the lowest*). Kinimasa further discloses the color value (*density*) of an image can be zero.).

Kunimasa does not disclose expressly *the information processing apparatus according to claim 8, wherein the drawing omission determination unit determines that the drawing process can be omitted when the output status flag indicates that the graphical drawing instruction is not yet set valid.*

However, Nagoya teaches *wherein the drawing omission determination unit determines that the drawing process can be omitted when the output status flag indicates that the graphical drawing instruction is not yet set valid* (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a variable flag (output status flag) that determines whether the drawing process corresponding to the graphical drawing instruction can be omitted based on the state of the variable flag



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(output status flag). Nagoya teaches a process that sets a variable flag (status flag) to “1” when it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to “1” indicates the area has already been drawn. Thus the drawing command/instruction is set to invalid and can be omitted. Setting the A variable flag (status flag) set to “0” indicates the area has not already been drawn, thus the drawing command/instruction is set to valid wherein the output is performed with changed attributes and can not be omitted.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 11**, Kunimasa discloses *the information processing apparatus according to claim 8, a method for performing the drawing process is a logical sum (OR) among the drawing attributes of a pattern concerning the graphical drawing instruction* (col. 7, lines 37-45; col. 13, lines 4-6; Kunimasa discloses a user can designate the logical arithmetic process to the bit map data between images, such as logical sum (OR). Kinimasa further discloses the color value (*density*) of an image can be zero.).

Kunimasa does not disclose expressly *the information processing apparatus according to claim 8, wherein the drawing omission determination unit determines that*

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*the drawing process can be omitted when the output status flag indicates that the graphical drawing instruction is not yet set valid, when the color density is the lowest.*

However, Nagoya teaches *wherein the drawing omission determination unit determines that the drawing process can be omitted when the output status flag indicates that the graphical drawing instruction is not yet set valid, when the color density is the lowest* (col. 5, line 58-col. 6, line 50; Nagoya teaches judgment is made whether or not the variable flag is "0" wherein the application does not overlap what has already been drawn, so the relevant area is white. Nagoya also teaches representation can be made with brightness, wherein the "white" color density is set to "1". However further Nagoya teaches representation can be made with brightness, wherein the "white" color density is set to "1". Nagoya further teaches logic drawing attributes of "OR", "AND" and "XOR" which is used to change or not change a drawing attribute. At the time of the invention it would have been obvious to one of ordinary skill in the art to use or modify Nagoya teachings to provide a process that determines that the drawing process can be omitted when the color density is the lowest and also when the method is a logical sum (OR) among the drawing attributes of a pattern concerning the graphical drawing instruction.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 12**, Kunimasa discloses *the information processing apparatus according to claim 8, a method for performing the drawing process is an exclusive logical sum (XOR) among the drawing attributes of a pattern concerning the graphical drawing instruction* (col. 7, lines 37-45; col. 13, lines 4-6; Kunimasa discloses a user can designate the logical arithmetic process to the bit map data between images, such as exclusive logical sum (XOR). Kinimasa further discloses the color value (*density*) of an image can be zero.).

Kunimasa does not disclose expressly *the information processing apparatus according to claim 8, wherein the drawing omission determination unit determines that the drawing process can be omitted when the output status flag indicates that the graphical drawing instruction is not yet set valid, when the color density is the lowest*

However, Nagoya teaches *wherein the drawing omission determination unit determines that the drawing process can be omitted when the output status flag indicates that the graphical drawing instruction is not yet set valid, when the color density is the lowest* (col. 5, line 58-col. 6, line 50; Nagoya teaches judgment is made whether or not the variable flag is "0" wherein the application does not overlap what has already been drawn, so the relevant area is white. Nagoya also teaches representation can be made with brightness, wherein the "white" color density is set to "1". However further Nagoya teaches representation can be made with brightness, wherein the "white"

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color density is set to "1". Nagoya further teaches logic drawing attributes of "OR", "AND" and "XOR" which is used to change or not change a drawing attribute. At the time of the invention it would have been obvious to one of ordinary skill in the art to use or modify Nagoya teachings to provide a process that determines that the drawing process can be omitted when the color density is the lowest and also when the method is a logical sum (XOR) among the drawing attributes of a pattern concerning the graphical drawing instruction.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 13**, Kunimasa discloses *the information processing apparatus according to claim 8, a method of the drawing process is a logical product (AND) among the drawing attributes of a pattern concerning the graphical drawing instruction* (col. 7, lines 37-45; col. 13, lines 4-6; Kunimasa discloses a user can designate the logical arithmetic process to the bit map data between images, such as logical product (AND). Kinimasa further discloses the color value (*density*) of an image can be zero.).

Kunimasa does not disclose expressly *the information processing apparatus according to claim 8, wherein the drawing omission determination unit determines that*

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*the drawing process can be omitted when the output status flag indicates that the graphical drawing instruction is not yet set valid.*

However, Nagoya teaches *wherein the drawing omission determination unit determines that the drawing process can be omitted when the output status flag indicates that the graphical drawing instruction is not yet set valid* (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a variable flag (output status flag) that determines whether the drawing process corresponding to the graphical drawing instruction can be omitted based on the state of the variable flag (output status flag). Nagoya teaches a process that sets a variable flag (status flag) to “1” when it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to “1” indicates the area has already been drawn. Thus the drawing command/instruction is set to invalid and can be omitted. Setting the A variable flag (status flag) set to “0” indicates the area has not already been drawn, thus the drawing command/instruction is set to valid wherein the output is performed with changed attributes and can not be omitted.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 17**, Kunimasa does not expressly disclose *the information processing apparatus according to claim 1, wherein when the graphical drawing instruction concerns a pattern of a color, the drawing omission determination unit determines whether the drawing process can be omitted for each color plane of the color.*

However, Nagoya teaches *when the graphical drawing instruction concerns a pattern of a color, the drawing omission determination unit determines whether the drawing process can be omitted for each color plane of the color* (col. 5, line 58-col. 6, line 50; Nagoya teaches judgment is made whether or not the variable flag is “0” wherein the application does not overlap what has already been drawn, so the relevant area is white. Nagoya also teaches representation can be made with brightness, wherein the “white’ color density is set to “1”. Nagoya further teaches the RGB color representation along with logic drawing attributes. At the time of the invention it would have been obvious to one of ordinary skill in the art to use or modify Nagoya teachings to provide a process to determine whether the drawing process can be omitted for each color plane of the color.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 18,** Kunimasa does not expressly disclose *the information processing apparatus according to claim 1, wherein the drawing omission determination unit determines whether the drawing process can be omitted only when a pattern concerning the graphical drawing instruction is a graphic pattern.*

However, Nagoya teaches *wherein the drawing omission determination unit determines whether the drawing process can be omitted only when a pattern concerning the graphical drawing instruction is a graphic pattern* (col. 9, lines 15-35; Fig. 17; Nagoya teaches a rectangular graphic pattern which is used to make judgment that two areas are overlapping, thus determining whether the drawing process can be omitted.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 19,** Kunimasa discloses the drawing logical arithmetic process determination unit analyzes the drawing arithmetic process instruction and determines whether the instruction or a plurality of continuous drawing instructions has the content which may be processed without any logical arithmetic process or not. The Examiner relates this teaching to the current invention that the drawing instructions are analyzed to determine if they should be process further or not (col. 5, lines 14-34);

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Kunimasa does not disclose expressly *the information processing apparatus according to claim 1, wherein when a pattern concerning the graphical drawing instruction is an image pattern, the drawing omission determination unit detects continuous pixels of the same color within the image pattern, and determines whether the drawing process can be omitted for each portion of continuous pixels.*

However, Nagoya teaches *wherein when a pattern concerning the graphical drawing instruction is an image pattern, the drawing omission determination unit detects continuous pixels of the same color within the image pattern, and determines whether the drawing process can be omitted for each portion of continuous pixels* (col. 9, lines 15-35; Figs. 16 and 17; Nagoya teaches a rectangular graphic pattern which is used to make judgment that two areas are overlapping, thus determining whether the drawing process can be omitted. Nagoya teaches an image format wherein “1” indicates that a corresponding pixel is within the area and “0” represents otherwise.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claims 20, 57 and 69,** Kunimasa does not disclose expressly *when a pattern concerning the graphical drawing instruction is an image pattern, the drawing omission determination unit determines whether the drawing process can be omitted of the image pattern in a word length unit.*



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However, Nagoya teaches *when a pattern concerning the graphical drawing instruction is an image pattern, the drawing omission determination unit determines whether the drawing process can be omitted of the image pattern in a word length unit* (col. 9, lines 8-35; Nagoya teaches a pattern concerning the graphical drawing instruction is an image pattern.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 21,** Kunimasa does not expressly disclose *the information processing apparatus according to claim 1, wherein the output unit outputs graphical drawing instructions set valid by the selection unit, to the image formation apparatus one-by-one.*

Nagoya teaches *wherein the output unit outputs graphical drawing instructions set valid by the selection unit, to the image formation apparatus one-by-one* (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a variable flag (output status flag) that determines whether the drawing process corresponding to the graphical drawing instruction can be omitted based on the state of the variable flag (output status flag). Nagoya teaches a process that sets a variable flag (status flag) to “1” when it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to “1”

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indicates the area has already been drawn. Thus the drawing command/instruction is set to invalid and can be omitted. Setting the variable flag (status flag) to "0" indicates the area has not already been drawn, thus the drawing command/instruction is set to valid and can not be omitted.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 22**, Kunimasa does not expressly disclose *the information processing apparatus according to claim 1, further comprising a drawing data memory that stores graphical drawing instructions set valid by the selection unit, wherein the output unit outputs the valid graphical drawing instructions stored in the drawing data memory to the image formation apparatus altogether.*

However, Nagoya teaches *a drawing data memory that stores graphical drawing instructions set valid by the selection unit, wherein the output unit outputs the valid graphical drawing instructions stored in the drawing data memory to the image formation apparatus altogether* (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a variable flag (output status flag) that determines whether the drawing process corresponding to the graphical drawing instruction can be omitted based on the state of the variable flag (output status flag). Nagoya teaches a process that sets a variable flag (status flag) to "1" when it has determined that a

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drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to “1” indicates the area has already been drawn, wherein the drawing command/instruction is set to invalid and can be omitted and the output is performed without any changed attribute. Thus the drawing instruction does not change the contents of a memory at a drawing destination before and after the drawing process regardless of the contents of the memory. A variable flag (status flag) set to “0” indicates the area has not already been drawn, thus the drawing command/instruction is set to valid wherein the output is performed with changed attributes and can not be omitted.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to independent claim 23,** Kunimasa discloses *an image formation apparatus comprising:*

*a page memory (col. 5, line 54; 24 in Fig 2.; Kunimasa discloses an image forming system which include a page memory);*

*a drawing omission determination unit that determines whether drawing process corresponding to a graphical drawing instruction, out of a plurality of graphical drawing instructions, can or cannot be omitted based on a drawing attribute of a pattern corresponding to the graphical drawing instruction (col. 5, lines 14-34; Kunimasa*

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discloses the drawing logical arithmetic process determination unit analyzes the drawing arithmetic process instruction and determines whether the instruction or a plurality of continuous drawing instructions has the content which may be processed without any logical arithmetic process or not. The Examiner relates this teaching to the current invention that the drawing instructions are analyzed to determine if they should be process further or not; col. 10, lines 42-67 & col. 11, lines 1-30; Fig. 7; Kunimasa further discloses a process in which drawing instructions are analyzed to determine if they are identical or not. An second image pattern along with it's drawing instruction is compared to a first image pattern along with it's drawing instruction, which is stored in drawing object memory unit. If the drawing information is determined to be identical, the second drawing information is not output and the process for the second drawing information is completed at this point);

*a drawing unit that performs the drawing process to draws an image onto the page memory based on the other graphical drawing instructions (col. 6, lines 20-45; Kunimasa discloses an image unit that draws an image depending on the instructions of the interpreter unit. The images are then stored in a page memory.).*

Kunimasa does not expressly disclose *a selection unit that makes the graphical drawing instruction invalid if the drawing omission determination unit determines that the drawing process corresponding to the graphical drawing instruction to be made invalid can be omitted, and sets another graphical drawing instruction valid.*

*an output status flag that indicates whether the selection unit has already set a certain graphical drawing instruction valid, and*

*wherein the drawing omission determination unit checks the output status flag and determines whether the drawing process corresponding to the graphical drawing instruction can be omitted based on the state of the output status flag, and ,*

*an image formation unit that forms an image onto a recording medium paper based on the image on the page memory.*

*wherein the graphical drawing instruction is made invalid, the drawing process corresponding to the graphical drawing instruction is not performed.*

Nagoya teaches a selection unit that makes the graphical drawing instruction invalid if the drawing omission determination unit determines that the drawing process corresponding to the graphical drawing instruction to be made invalid can be omitted, and sets another graphical drawing instruction valid (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a process that sets a variable flag (status flag) to “1” when it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to “1” indicates the area has already been drawn. Thus the drawing command/instruction is set to invalid and can be omitted.).

*an output status flag that indicates whether the selection unit has already set a certain graphical drawing instruction valid (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a process that sets a variable flag (status*

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flag) to “1” when it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to “1” indicates the area has already been drawn. Thus the drawing command/instruction is set to invalid and can be omitted.).

*wherein the drawing omission determination unit checks the output status flag and determines whether the drawing process corresponding to the graphical drawing instruction can be omitted based on the state of the output status flag\_(col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a variable flag (output status flag) that determines whether the drawing process corresponding to the graphical drawing instruction can be omitted based on the state of the variable flag (output status flag). Nagoya teaches a process that sets a variable flag (status flag) to “1” when it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to “1” indicates the area has already been drawn. Thus the drawing command/instruction is set to invalid and can be omitted. Setting the variable flag (status flag) to “0” indicates the area has not already been drawn, thus the drawing command/instruction is set to valid and can not be omitted.).*

*wherein the graphical drawing instruction is made invalid, the drawing process corresponding to the graphical drawing instruction is not performed (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a process that sets a variable flag (status flag) to “1” when it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag*

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(status flag) to “1” indicates the area has already been drawn. Thus the drawing command/instruction is set to invalid and can be omitted.).

*an image formation unit that forms an image onto a recording medium paper based on the image on the page memory (col. 9, lines 35-43; Nagoya teaches a output device such as a printer for printing the image.).*

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 24,** Kunimasa discloses *the image formation apparatus according to claim 23, wherein the graphical drawing instruction is described in a page description language that includes a basic graphical drawing instruction which specifies a pattern to be drawn, and a drawing attribute instruction which specifies the drawing attribute (col. 13, lines 49-60; Fig. 10; Kunimasa discloses the drawing instruction are sent by the drawing instruction group called PDL (page description language)).*

**In regard to dependent claim 25,** Kunimasa discloses *the image formation apparatus according to claim 23, wherein the drawing attribute includes information*

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*about a color of a pattern concerning the graphical drawing instruction and a method for performing the drawing process (col. 13, lines 49-67 & col. 14, lines 1-52).*

**In regard to dependent claim 26,** Kunimasa does not expressly disclose *the image formation apparatus according to claim 25, wherein the drawing omission determination unit determines that the drawing process can be omitted when the drawing attribute of a pattern concerning the graphical drawing instruction does not change the contents of a memory at a drawing destination before and after the drawing process regardless of the contents of the memory.*

However, Nagoya teaches *wherein the drawing omission determination unit determines that the drawing process can be omitted when the drawing attribute of a pattern concerning the graphical drawing instruction does not change the contents of a memory at a drawing destination before and after the drawing process regardless of the contents of the memory* (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a process that sets a variable flag (status flag) to “1” when it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to “1” indicates the area has already been drawn, wherein the drawing command/instruction is set to invalid and can be omitted and the output is performed without any changed attribute. Thus the drawing instruction does not change the contents of a memory at a drawing destination before and after the drawing process regardless of the contents of the memory. A variable flag



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(status flag) set to “0” indicates the area has not already been drawn, thus the drawing command/instruction is set to valid wherein the output is performed with changed attributes and can not be omitted.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 27**, Kunimasa does not expressly disclose *the image formation apparatus according to claim 26, a method for performing the drawing process that the contents of a memory at a drawing destination are not changed before and after the drawing process regardless of the contents of the memory.*

However, Nagoya teaches *a method for performing the drawing process that the contents of a memory at a drawing destination are not changed before and after the drawing process regardless of the contents of the memory* (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a process that sets a variable flag (status flag) to “1” when it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to “1” indicates the area has already been drawn, wherein the drawing command/instruction is set to invalid and can be omitted and the output is performed without any changed attribute. Thus the drawing instruction does not change the

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contents of a memory at a drawing destination before and after the drawing process regardless of the contents of the memory. A variable flag (status flag) set to "0" indicates the area has not already been drawn, thus the drawing command/instruction is set to valid and can not be omitted wherein the output is performed with changed attributes.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 28**, Kunimasa does not expressly disclose *the image formation apparatus according to claim 27, wherein the drawing determination unit determines that the drawing process can be omitted when the color density is the lowest and also when the method is a logical sum (OR) among the drawing attributes of a pattern concerning the graphical drawing instruction.*

However, Nagoya teaches *the drawing determination unit determines that the drawing process can be omitted when the color density is the lowest and also when the method is a logical sum (OR) among the drawing attributes of a pattern concerning the graphical drawing instruction* (col. 5, line 58-col. 6, line 50; Nagoya teaches judgment is made whether or not the variable flag is "0" wherein the application does not overlap what has already been drawn, so the relevant area is white. Nagoya also teaches representation can be made with brightness, wherein the "white" color density is set to

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"1". However further Nagoya teaches representation can be made with brightness, wherein the "white" color density is set to "1". Nagoya further teaches logic drawing attributes of "OR", "AND" and "XOR" which is used to change or not change a drawing attribute. At the time of the invention it would have been obvious to one of ordinary skill in the art to use or modify Nagoya teachings to provide a process that determines that the drawing process can be omitted when the color density is the lowest and also when the method is a logical sum (OR) among the drawing attributes of a pattern concerning the graphical drawing instruction.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 29**, Kunimasa does not expressly disclose *the image formation apparatus according to claim 23, wherein the drawing omission determination unit determines that the drawing process can be omitted when a memory at a drawing destination is in an initialized state.*

However, Nagoya teaches *wherein the drawing omission determination unit determines that the drawing process can be omitted when a memory at a drawing destination is in an initialized state* (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a process that sets a variable flag (status flag) to "1" when it has determined that a drawing attribute overlaps with the drawing area of

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another drawing command. Setting the variable flag (status flag) to “1” indicates the area has already been drawn. Thus the drawing command/instruction is set to invalid and can be omitted.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 30**, Kunimasa does not disclose expressly *the image formation apparatus according to claim 23, wherein the selection unit sets the output status flag corresponding to the certain graphical drawing instruction to set that graphical drawing instruction valid.*

However, Nagoya teaches *wherein the selection unit sets the output status flag corresponding to the certain graphical drawing instruction to set that graphical drawing instruction valid* (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a variable flag (output status flag) that determines whether the drawing process corresponding to the graphical drawing instruction can be omitted based on the state of the variable flag (output status flag). Nagoya teaches a process that sets a variable flag (status flag) to “1” when it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to “1” indicates the area has already been drawn. Thus the drawing command/instruction is set to invalid and can be omitted. Setting the variable

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flag (status flag) to "0" indicates the area has not already been drawn, thus the drawing command/instruction is set to valid and can not be omitted.)

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 31,** Kunimasa discloses *the image formation apparatus according to claim 30, wherein the drawing attribute of a pattern concerning the graphical drawing instruction does not change the contents of a memory at a drawing destination before and after the drawing process when the memory is in an initialized state even when the drawing process is carried out* (col. 10, lines 42-67 & col. 11, lines 1-30; Fig. 7; Kunimasa discloses a process in which drawing instructions are analyzed to determine if they are identical or not. A second image pattern along with its drawing instruction is compared to a first image pattern along with its drawing instruction, which is stored in drawing object memory unit. If the drawing information is determined to be identical, the second drawing information is not output and the process for the second drawing information is completed at this point.).

Kunimasa does not disclose expressly *wherein the drawing omission determination unit determines that the drawing process can be omitted when the output status flag is not set.*

However, Nagoya teaches *wherein the drawing omission determination unit determines that the drawing process can be omitted when the output status flag is not*

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set (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a variable flag (output status flag) that determines whether the drawing process corresponding to the graphical drawing instruction can be omitted based on the state of the variable flag (output status flag). Nagoya teaches a process that sets a variable flag (status flag) to “1” when it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to “1” indicates the area has already been drawn. Thus the drawing command/instruction is set to invalid and can be omitted. Setting the variable flag (status flag) to “0” indicates the area has not already been drawn, thus the drawing command/instruction is set to valid and can not be omitted.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 32,** Kunimasa discloses *the image formation apparatus according to claim 30, when the color density is the lowest and also when a method for performing the drawing process is a replacement (SET) among the drawing attributes of a pattern concerning the graphical drawing instruction* (col. 15, lines 56-65; col. 18, lines 3-11; Kunimasa discloses over-writing (*replacement (SET)*) the image when the color value is zero (*color density is the lowest*). Kinimasa further discloses the color value (*density*) of an image can be zero.).

Kunimasa does not disclose expressly *the information processing apparatus according to claim 8, wherein the drawing omission determination unit determines that the drawing process can be omitted when the output status flag indicates that the graphical drawing instruction is not yet set valid.*

However, Nagoya teaches *wherein the drawing omission determination unit determines that the drawing process can be omitted when the output status flag indicates that the graphical drawing instruction is not yet set valid* (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a variable flag (output status flag) that determines whether the drawing process corresponding to the graphical drawing instruction can be omitted based on the state of the variable flag (output status flag). Nagoya teaches a process that sets a variable flag (status flag) to “1” when it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to “1” indicates the area has already been drawn. Thus the drawing command/instruction is set to invalid and can be omitted. Setting the A variable flag (status flag) set to “0” indicates the area has not already been drawn, thus the drawing command/instruction is set to valid wherein the output is performed with changed attributes and can not be omitted.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 33**, Kunimasa discloses *the image formation apparatus according to claim 30, when the color density is the lowest and also when a method for performing the drawing process is a logical sum (OR) among the drawing attributes of a pattern concerning the graphical drawing instruction* (col. 7, lines 37-45; col. 13, lines 4-6; Kunimasa discloses a user can designate the logical arithmetic process to the bit map data between images, such as logical sum (OR). Kinimasa further discloses the color value (*density*) of an image can be zero.).

Kunimasa does not disclose expressly *the image formation apparatus according to claim 30, wherein the drawing omission determination unit determines that the drawing process can be omitted when the output status flag is not set, when the color density is the lowest.*

However, Nagoya teaches *wherein the drawing omission determination unit determines that the drawing process can be omitted when the output status flag indicates that the graphical drawing instruction is not yet set valid, when the color density is the lowest* (col. 5, line 58-col. 6, line 50; Nagoya teaches judgment is made whether or not the variable flag is “0” wherein the application does not overlap what has already been drawn, so the relevant area is white. Nagoya also teaches representation can be made with brightness, wherein the “white’ color density is set to “1”. However further Nagoya teaches representation can be made with brightness, wherein the “white’



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color density is set to "1". Nagoya further teaches logic drawing attributes of "OR", "AND" and "XOR" which is used to change or not change a drawing attribute. At the time of the invention it would have been obvious to one of ordinary skill in the art to use or modify Nagoya teachings to provide a process that determines that the drawing process can be omitted when the color density is the lowest and also when the method is a logical sum (OR) among the drawing attributes of a pattern concerning the graphical drawing instruction.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 34**, Kunimasa discloses *the image formation apparatus according to claim 30, wherein the color density is the lowest, and when a method for performing the drawing process is an exclusive logical sum (XOR) among the drawing attributes of a pattern concerning the graphical drawing instruction* (col. 7, lines 37-45; col. 13, lines 4-6; Kunimasa discloses a user can designate the logical arithmetic process to the bit map data between images, such as exclusive logical sum (XOR). Kinimasa further discloses the color value (*density*) of an image can be zero.).

Kunimasa does not disclose expressly the *image formation apparatus according to claim 30, wherein the drawing omission determination unit determines that the*

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*drawing process can be omitted when the output status flag is not set, when the color density is the lowest.*

However, Nagoya teaches *wherein the drawing omission determination unit determines that the drawing process can be omitted when the output status flag indicates that the graphical drawing instruction is not yet set valid, when the color density is the lowest* (col. 5, line 58-col. 6, line 50; Nagoya teaches judgment is made whether or not the variable flag is "0" wherein the application does not overlap what has already been drawn, so the relevant area is white. Nagoya also teaches representation can be made with brightness, wherein the "white" color density is set to "1". However further Nagoya teaches representation can be made with brightness, wherein the "white" color density is set to "1". Nagoya further teaches logic drawing attributes of "OR", "AND" and "XOR" which is used to change or not change a drawing attribute. At the time of the invention it would have been obvious to one of ordinary skill in the art to use or modify Nagoya teachings to provide a process that determines that the drawing process can be omitted when the color density is the lowest and also when the method is a logical sum (XOR) among the drawing attributes of a pattern concerning the graphical drawing instruction.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 35**, Kunimasa discloses *the image formation apparatus according to claim 30, wherein the modification method is a logical product (AND) among the drawing attributes of a pattern concerning the graphical drawing instruction* (col. 7, lines 37-45; col. 13, lines 4-6; Kunimasa discloses a user can designate the logical arithmetic process to the bit map data between images, such as logical product (AND). Kinimasa further discloses the color value (*density*) of an image can be zero.).

Kunimasa does not disclose expressly teaches the *apparatus according to claim 30, wherein the drawing omission determination unit determines that the drawing process can be omitted when the output status flag is not set.*

However, Nagoya teaches *wherein the drawing omission determination unit determines that the drawing process can be omitted when the output status flag indicates that the graphical drawing instruction is not yet set valid* (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a variable flag (output status flag) that determines whether the drawing process corresponding to the graphical drawing instruction can be omitted based on the state of the variable flag (output status flag). Nagoya teaches a process that sets a variable flag (status flag) to “1” when it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to “1” indicates the area has already been drawn. Thus the drawing command/instruction is set to invalid

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and can be omitted. Setting the A variable flag (status flag) set to "0" indicates the area has not already been drawn, thus the drawing command/instruction is set to valid wherein the output is performed with changed attributes and can not be omitted.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 39,** Kunimasa does not expressly disclose *the image formation apparatus according to claim 23, wherein the graphical drawing instruction concerns a pattern of a color, and the drawing omission determination unit determines whether the drawing process can be omitted for each color plane of the color.*

However, Nagoya teaches *when the graphical drawing instruction concerns a pattern of a color, the drawing omission determination unit determines whether the drawing process can be omitted for each color plane of the color* (col. 5, line 58-col. 6, line 50; Nagoya teaches judgment is made whether or not the variable flag is "0" wherein the application does not overlap what has already been drawn, so the relevant area is white. Nagoya also teaches representation can be made with brightness, wherein the "white" color density is set to "1". Nagoya further teaches the RGB color representation along with logic drawing attributes. At the time of the invention it would have been obvious to one of ordinary skill in the art to use or modify Nagoya teachings

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to provide a process to determine whether the drawing process can be omitted for each color plane of the color.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 40**, Kunimasa does not expressly disclose *the image formation apparatus according to claim 23, wherein the drawing omission determination unit determines whether the drawing process can be omitted when the graphical drawing instruction corresponds to a graphic pattern.*

However, Nagoya teaches *wherein the drawing omission determination unit determines whether the drawing process can be omitted only when a pattern concerning the graphical drawing instruction is a graphic pattern* (col. 9, lines 15-35; Fig. 17; Nagoya teaches a rectangular graphic pattern which is used to make judgment that two areas are overlapping, thus determining whether the drawing process can be omitted.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 41**, Kunimasa discloses the drawing logical arithmetic process determination unit analyzes the drawing arithmetic process instruction and determines whether the instruction or a plurality of continuous drawing instructions has the content which may be processed without any logical arithmetic process or not. The Examiner relates this teaching to the current invention that the drawing instructions are analyzed to determine if they should be process further or not (col. 5, lines 14-34).

Kunimasa does not disclose expressly *the image formation apparatus according to claim 23, wherein when a pattern concerning the graphical drawing instruction is an image pattern, the drawing omission determination unit detects continuous pixels of the same color within the image pattern, and determines whether the drawing process can be omitted for each portion of continuous pixels.*

However, Nagoya teaches *wherein when a pattern concerning the graphical drawing instruction is an image pattern, the drawing omission determination unit detects continuous pixels of the same color within the image pattern, and determines whether the drawing process can be omitted for each portion of continuous pixels* (col. 9, lines 15-35; Figs. 16 and 17; Nagoya teaches a rectangular graphic pattern which is used to make judgment that two areas are overlapping, thus determining whether the drawing process can be omitted. Nagoya teaches an image format wherein “1” indicates that a corresponding pixel is within the area and “0” represents otherwise.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process

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wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 42,** Kunimasa does not disclose expressly *the image formation apparatus according to claim 23, wherein when a pattern concerning the graphical drawing instruction is an image pattern, the drawing omission determination unit determines whether the drawing process can be omitted of the image pattern in a word length unit.*

However, Nagoya teaches *when a pattern concerning the graphical drawing instruction is an image pattern, the drawing omission determination unit determines whether the drawing process can be omitted of the image pattern in a word length unit* (col. 9, lines 8-35; Nagoya teaches a pattern concerning the graphical drawing instruction is an image pattern.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 43,** Kunimasa does not expressly disclose *the image formation apparatus according to claim 23, wherein the output unit outputs the other graphical drawing instructions to the image formation apparatus one-by-one.*

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Nagoya teaches *wherein the output unit outputs graphical drawing instructions set valid by the selection unit, to the image formation apparatus one-by-one* (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a variable flag (output status flag) that determines whether the drawing process corresponding to the graphical drawing instruction can be omitted based on the state of the variable flag (output status flag). Nagoya teaches a process that sets a variable flag (status flag) to “1” when it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to “1” indicates the area has already been drawn. Thus the drawing command/instruction is set to invalid and can be omitted. Setting the variable flag (status flag) to “0” indicates the area has not already been drawn, thus the drawing command/instruction is set to valid and can not be omitted.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1

**In regard to dependent claim 44,** Kunimasa does not expressly disclose *the image formation apparatus according to claim 23, further comprising a drawing data memory that stores the other graphical drawing instructions, wherein the output unit outputs the other graphical drawing instructions stored in the drawing data memory to the image formation apparatus.*



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However, Nagoya teaches *a drawing data memory that stores graphical drawing instructions set valid by the selection unit, wherein the output unit outputs the valid graphical drawing instructions stored in the drawing data memory to the image formation apparatus altogether* (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a variable flag (output status flag) that determines whether the drawing process corresponding to the graphical drawing instruction can be omitted based on the state of the variable flag (output status flag). Nagoya teaches a process that sets a variable flag (status flag) to “1” when it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to “1” indicates the area has already been drawn, wherein the drawing command/instruction is set to invalid and can be omitted and the output is performed without any changed attribute. Thus the drawing instruction does not change the contents of a memory at a drawing destination before and after the drawing process regardless of the contents of the memory. A variable flag (status flag) set to “0” indicates the area has not already been drawn, thus the drawing command/instruction is set to valid wherein the output is performed with changed attributes and can not be omitted.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claim 45,** Kunimasa discloses *the image formation apparatus according to claim 24, further comprising:*

*a receiving unit that receives the drawing instructions from an external source (col.5, line 52; 18 in Fig 2.);*

*and an interpreter that converts the drawing instructions into the graphical drawing instructions of a format which is suitable for the drawing process (col. 6, lines 20-35; 2 in Fig. 21; Kunimasa discloses the interpreter unit which recognizes the drawing information received by the printer to interpret a command by forming command and argument. Based on the instructions of the interpreter unit, the imager unit draws the image).*

**In regard to independent claims 46 and 58,** Kunimasa disclose *a machine-implemented drawing processing method comprising:*

*determining whether drawing process corresponding to a plurality of graphical drawing instructions, from a plurality of graphical instruction, can or cannot be omitted based on an image formation apparatus, based on a drawing attribute of a pattern corresponding to the graphical drawing instruction (col. 5, lines 14-34; Kunimasa discloses the drawing logical arithmetic process determination unit analyzes the drawing arithmetic process instruction and determines whether the instruction or a plurality of continuous drawing instructions has the content which may be processed without any logical arithmetic process or not. The Examiner relates this teaching to the current invention that the drawing instructions are analyzed to determine if they should*

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be process further or not; col. 10, lines 42-67 & col. 11, lines 1-30; Fig. 7; Kunimasa further discloses a process in which drawing instructions are analyzed to determine if they are identical or not. An second image pattern along with it's drawing instruction is compared to a first image pattern along with it's drawing instruction, which is stored in drawing object memory unit. If the drawing information is determined to be identical, the second drawing information is not output and the process for the second drawing information is completed at this point);

Kunimasa does not disclose expressly *making other graphical drawing instruction valid and the graphical drawing instruction invalid and generating a graphical drawing output by said image forming apparatus by executing said valid other graphical drawing instructions and not executing said invalid graphical drawing instruction made invalid, to reduce a number of operations performed by said image formation apparatus, if it is determined in (a) that the determining that the drawing process corresponding to the graphical drawing instruction to be made invalid can be omitted by the image formation apparatus.*

*(c) checking an output status flag that is set when a certain graphical drawing instruction is made valid, and determining whether the drawing process corresponding to the graphical drawing instruction can be omitted based on the state of the output status flag.*

However, However, Nagoya teaches *making other graphical drawing instruction valid and the graphical drawing instruction invalid and generating a graphical drawing output by said image forming apparatus by executing said valid other graphical drawing instructions and not executing said invalid graphical drawing instruction made invalid, to reduce a number of operations performed by said image formation apparatus, if it is determined in (a) that the determining that the drawing process corresponding to the graphical drawing instruction to be made invalid can be omitted by the image formation apparatus* (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a process that sets a variable flag (status flag) to “1” when it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to “1” indicates the area has already been drawn. Thus the drawing command/instruction is set to invalid and can be omitted. Thus the drawing command/instruction is set to invalid and can be omitted. Setting the variable flag (status flag) to “0” indicates the area has not already been drawn, thus the drawing command/instruction is set to valid and can not be omitted. At the time of the invention it would have been obvious to one of ordinary skill in the art that Nagoya teaching of setting drawing instruction valid or invalid would reduce a number of operations performed by said image formation apparatus.).

*c) checking an output status flag that is set when a certain graphical drawing instruction is made valid, and determining whether the drawing process corresponding to the graphical drawing instruction can be omitted based on the state of the output status flag* (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54;

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Nagoya teaches a variable flag (output status flag) that determines whether the drawing process corresponding to the graphical drawing instruction can be omitted based on the state of the variable flag (output status flag). Nagoya teaches a process that sets a variable flag (status flag) to “1” when it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to “1” indicates the area has already been drawn. Thus the drawing command/instruction is set to invalid and can be omitted. Setting the variable flag (status flag) to “0” indicates the area has not already been drawn, thus the drawing command/instruction is set to valid and can not be omitted.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claims 47 and 59,** Kunimasa discloses *the drawing processing, wherein the determining includes determining that the drawing process can be omitted when the drawing attribute of a pattern concerning the graphical drawing instruction does not change the contents of a memory at a drawing destination before and after the drawing process regardless of the contents of the memory* (col. 10, lines 42-67 & col. 11, lines 1-30; Fig. 7; Kunimasa discloses a process in which drawing instructions are analyzed to determine if they are identical or not. An second image pattern along with it's drawing instruction is compared to a first image pattern along

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with its drawing instruction, which is stored in drawing object memory unit. If the drawing information is determined to be identical, the second drawing information is not output and the process for the second drawing information is completed at this point.).

**In regard to dependent claims 48 and 60,** Kunimasa discloses *the drawing processing wherein a method for performing the drawing process that the contents of a memory at a drawing destination are not changed before and after the drawing process regardless of the contents of the memory* (col. 10, lines 42-67 & col. 11, lines 1-30; Fig. 7; Kunimasa discloses a process in which drawing instructions are analyzed to determine if they are identical or not. An second image pattern along with its drawing instruction is compared to a first image pattern along with its drawing instruction, which is stored in drawing object memory unit. If the drawing information is determined to be identical, the second drawing information is not output and the process for the second drawing information is completed at this point.).

Kunimasa does not expressly disclose *wherein the determining includes determining that the drawing process can be omitted when it is determined from the drawing attribute of a pattern concerning the graphical drawing instruction.*

However, Nagoya teaches *wherein the determining includes determining that the drawing process can be omitted when it is determined from the drawing attribute of a pattern concerning the graphical drawing instruction* (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a process that sets a variable flag (status flag) to “1” when it has determined that a drawing attribute overlaps with the

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drawing area of another drawing command. Setting the variable flag (status flag) to "1" indicates the area has already been drawn, wherein the drawing command/instruction is set to invalid and can be omitted and the output is performed without any changed attribute. Thus the drawing instruction does not change the contents of a memory at a drawing destination before and after the drawing process regardless of the contents of the memory. A variable flag (status flag) set to "0" indicates the area has not already been drawn, thus the drawing command/instruction is set to valid wherein the output is performed with changed attributes and can not be omitted.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claims 49 and 61,** Kunimasa discloses *the drawing processing method, wherein the determining includes determining that the drawing process can be omitted when a memory at a drawing destination is in an initialized state* (col. 15, lines 1-38).

**In regard to dependent claims 51 and 63,** Kunimasa discloses *the drawing processing method wherein the drawing attribute of a pattern concerning the graphical drawing instruction does not change the contents of a memory at a drawing destination before and after the drawing process when the memory is in an initialized state even when the drawing process is carried out* (col. 10, lines 42-67 & col. 11, lines 1-30; Fig.

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7; Kunimasa discloses a process in which drawing instructions are analyzed to determine if they are identical or not. An second image pattern along with it's drawing instruction is compared to a first image pattern along with it's drawing instruction, which is stored in drawing object memory unit. If the drawing information is determined to be identical, the second drawing information is not output and the process for the second drawing information is completed at this point.).

Kunimasa does not disclose expressly *the drawing processing method according to claim 51, wherein the determining includes determining that the drawing process can be omitted when the output status flag is not set.*

However, Nagoya teaches *the drawing processing method according to claim 51, wherein the determining includes determining that the drawing process can be omitted when the output status flag is not set* (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a variable flag (output status flag) that determines whether the drawing process corresponding to the graphical drawing instruction can be omitted based on the state of the variable flag (output status flag). Nagoya teaches a process that sets a variable flag (status flag) to "1" when it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to "1" indicates the area has already been drawn. Thus the drawing command/instruction is set to invalid and can be omitted. Setting the A variable flag (status flag) set to "0" indicates the area has not already been drawn, thus the drawing command/instruction is set to valid wherein the output is performed with changed attributes and can not be omitted.).



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At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1)

**In regard to dependent claims 55 and 67,** Kunimasa does not expressly disclose *the drawing processing method, wherein the graphical drawing instruction concerns a pattern of a color, and the determining includes determining whether the drawing process can be omitted for each color plane of the color.*

However, Nagoya teaches *when the graphical drawing instruction concerns a pattern of a color, the drawing omission determination unit determines whether the drawing process can be omitted for each color plane of the color* (col. 5, line 58-col. 6, line 50; Nagoya teaches judgment is made whether or not the variable flag is "0" wherein the application does not overlap what has already been drawn, so the relevant area is white. Nagoya also teaches representation can be made with brightness, wherein the "white" color density is set to "1". Nagoya further teaches the RGB color representation along with logic drawing attributes. At the time of the invention it would have been obvious to one of ordinary skill in the art to use or modify Nagoya teachings to provide a process to determine whether the drawing process can be omitted for each color plane of the color.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process

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wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

**In regard to dependent claims 56 and 68,** Kunimasa does not expressly disclose *the drawing processing method, wherein the graphical drawing instruction corresponds to an image pattern, and the determining includes detecting continuous pixels of the same color within the image pattern, and determining whether the drawing process can be omitted for each portion of continuous pixels.*

However, Nagoya teaches *wherein when a pattern concerning the graphical drawing instruction is an image pattern, the drawing omission determination unit detects continuous pixels of the same color within the image pattern, and determines whether the drawing process can be omitted for each portion of continuous pixels* (col. 9, lines 15-35; Figs. 16 and 17; Nagoya teaches a rectangular graphic pattern which is used to make judgment that two areas are overlapping, thus determining whether the drawing process can be omitted. Nagoya teaches an image format wherein “1” indicates that a corresponding pixel is within the area and “0” represents otherwise.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

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**In regard to dependent claim 71**, Kunimasa does not expressly disclose *the information processing apparatus according to claim 1, wherein the drawing omission determination unit makes determination whether the drawing process corresponding to the graphical drawing instruction can be omitted, before the drawing process is performed.*

However, Nagoya teaches *wherein the drawing omission determination unit makes determination whether the drawing process corresponding to the graphical drawing instruction can be omitted, before the drawing process is performed* (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a variable flag (output status flag) that determines whether the drawing process corresponding to the graphical drawing instruction can be omitted based on the state of the variable flag (output status flag). Nagoya teaches a process that sets a variable flag (status flag) to “1” when it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to “1” indicates the area has already been drawn. Thus the drawing command/instruction is set to invalid and can be omitted. Setting the A variable flag (status flag) set to “0” indicates the area has not already been drawn, thus the drawing command/instruction is set to valid wherein the output is performed with changed attributes and can not be omitted. Thus determining whether the drawing process corresponding to the graphical drawing instruction can be omitted before the drawing process is performed.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col.

**In regard to dependent claim 72,** Kunimasa discloses *the information processing apparatus according to claim 1, wherein said selection unit makes one or more of the other graphical drawing instructions valid if the determination unit determines that the drawing processes of said one or more of the other graphical drawing instructions cannot be omitted, said image is obtained based on the valid one or more of the other graphical drawing instructions which are executed* (col. 10, lines 42-67 & col. 11, lines 1-30; Fig. 7; Kunimasa discloses a process in which drawing instructions are analyzed to determine if they are identical or not. An second image pattern along with it's drawing instruction is compared to a first image pattern along with it's drawing instruction, which is stored in drawing object memory unit. If the drawing information is determined to be identical, the second drawing information is not output. Thus the system determines that instruction is invalid and is omitted).

#### Note

It is noted that any citations to specific, pages, columns, lines, or figures in the prior art references and any interpretation of the reference should not be considered to be limiting in any way. A reference is relevant for all it contains and may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art.

See MPEP 2123.

**Claims 14, 52 and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunimasa in view of Nagoya and further in view of Kato (Pub. No.: US 2002/0132665 A1; Effective Filing Date: Mar. 19, 2001) (hereinafter 'Kato').**

**In regard to dependent claim 14,** Kunimasa in view of Nagoya does not disclose expressly *the information processing apparatus according to claim 8, wherein the output status flag indicates whether the selection unit has already set a certain graphical drawing instruction valid for each graphical drawing instruction concerning an image for one page.*

However, Kato teaches *wherein the output status flag indicates whether the selection unit has already set a certain graphical drawing instruction valid for each graphical drawing instruction concerning an image for one page* (0009, claim 14; claim 28; Kato teaches a determination unit that decides whether or not to executes a drawing operation. According to an instruction output from the controller, the determination unit renders a drawing instruction valid or invalid. Using the broadest interpretation, the Examiner concludes the output from the controller to include but not limited to an output status flag that indicates whether the selection unit has already set a certain graphical drawing instruction valid for each graphical drawing instruction concerning an image for one page.).

Therefore, at the time of the invention it would have been obvious to a person of ordinary skill in the art to combine Kato with Kunimasa in view of Nagoya for the benefit of providing an image processing apparatus, which allows user to select a mode for executing a drawing operation or a mode for not executing a drawing operation (0118).

**In regard to dependent claims 52 and 64,** Kunimasa in view of Nagoya does not disclose expressly *the drawing processing method, wherein the output status flag indicates whether a certain graphical drawing instruction has been made valid for each graphical drawing instruction concerning an image for one page.*

However, Kato teaches *wherein the output status flag indicates whether a certain graphical drawing instruction has been made valid for each graphical drawing instruction concerning an image for one page* (0009; 0011; claim 14; claim 28; Kato teaches a determination unit that decides whether or not to executes a drawing operation. According to an instruction output from the controller, the determination unit renders a drawing instruction valid or invalid. Using the broadest interpretation, the Examiner concludes the output from the controller to include but not limited to the output status flag indicates that the graphical drawing instruction is not yet set valid.).

Therefore, at the time of the invention it would have been obvious to a person of ordinary skill in the art to combine Kato with Kunimasa in view of Nagoya for the benefit of providing an image processing apparatus, which allows user to select a mode for executing a drawing operation or a mode for not executing a drawing operation (0118).

NOTE

It is noted that any citations to specific, pages, columns, lines, or figures in the prior art references and any interpretation of the reference should not be considered to be limiting in any way. A reference is relevant for all it contains and may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art. See MPEP 2123.

**Claims 15, 16, 53, 54, 65 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunimasa and Nagoya in view of Kato and further in view of Nagao.**

**In regard to dependent claim 15,** Kunimasa does not disclose expressly *the information processing apparatus according to claim 8, wherein one page is divided into specific number of determination regions, and the output status flag is provided for each determination region, and the drawing omission determination unit determines whether the drawing can be omitted based on the status of the output status flag for each determination region to which a drawing region concerning the graphical drawing instruction belongs.*

However, Nagoya teaches *drawing omission determination unit determines whether the drawing can be omitted based on the status of the output status flag* (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a

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variable flag (output status flag) that determines whether the drawing process corresponding to the graphical drawing instruction can be omitted based on the state of the variable flag (output status flag). Nagoya teaches a process that sets a variable flag (status flag) to “1” when it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to “1” indicates the area has already been drawn. Thus the drawing command/instruction is set to invalid and can be omitted. Setting the variable flag (status flag) to “0” indicates the area has not already been drawn, thus the drawing command/instruction is set to valid and can not be omitted.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

Kato teaches *the output status flag is provided for each determination region, to which a drawing region concerning the graphical drawing instruction belongs* (0009, claim 14; claim 28; Kato teaches a determination unit that decides whether or not to executes a drawing operation. According to an instruction output from the controller, the determination unit renders a drawing instruction valid or invalid. Using the broadest interpretation, the Examiner concludes the output from the controller to include but not limited to a status of the output status flag for each determination region to which a drawing region concerning the graphical drawing instruction belongs.).



Therefore, at the time of the invention it would have been obvious to a person of ordinary skill in the art to combine Kato with Kunimasa in view of Nagoya for the benefit of providing an image processing apparatus, which allows user to select a mode for executing a drawing operation or a mode for not executing a drawing operation (0118).

Nagao teaches *the information processing apparatus according to claim 8, wherein one page is divided into specific number of determination regions* (col. 5, lines 61-64; Nagao teaches a single page may be constituted by a plurality of regions.).

Therefore, at the time of the invention it would have been obvious to a person of ordinary skill in the art to combine Nagao with Kunimasa and Nagoya in view of Kato for the benefit of not executing unnecessary drawing instruction so that high speed and high quality drawing process may be enabled (col. 3, lines 32-34).

**In regard to dependent claim 16,** Kunimasa, Nagoya and Kato does not disclose expressly *the information processing apparatus according to claim 15, wherein the determination regions are decided based on bands.*

However, Nagao teaches *the information processing apparatus according to claim 15, wherein the determination regions are decided based on bands* (col. 1, lines 53-54; col. 5, lines 61-64).

Therefore, at the time of the invention it would have been obvious to a person of ordinary skill in the art to combine Nagao with Kunimasa and Nagoya in view of Kato for

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the benefit of reducing massive memory requirements, thus lowering the cost of memory accordingly (col.1, lines 44-47).

**In regard to dependent claims 53 and 65,** Kunimasa does not disclose expressly *the drawing processing method further comprising dividing one page into a desired number of determination regions, wherein the output status flag is provided in each determination region, and*

*the determining includes determining whether the drawing can be omitted based on the status of the output status flag for each determination region to which a drawing region concerning the graphical drawing instruction belongs.*

However, Nagoya teaches *drawing omission determination unit determines whether the drawing can be omitted based on the status of the output status flag* (col. 1, line 5-col 2, line 33; col. 5, line 35-col. 6, line 4; col. 6, lines 51-54; Nagoya teaches a variable flag (output status flag) that determines whether the drawing process corresponding to the graphical drawing instruction can be omitted based on the state of the variable flag (output status flag). Nagoya teaches a process that sets a variable flag (status flag) to “1” when it has determined that a drawing attribute overlaps with the drawing area of another drawing command. Setting the variable flag (status flag) to “1” indicates the area has already been drawn. Thus the drawing command/instruction is set to invalid and can be omitted. Setting the variable flag (status flag) to “0” indicates

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the area has not already been drawn, thus the drawing command/instruction is set to valid and can not be omitted.).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine Nagoya with Kunimasa for the benefit of providing a process wherein judgment is made whether or not a drawing can be omitted (col. 5, line 67-col. 6, line1).

*Kato teaches the output status flag is provided for each determination region, a for each determination region to which a drawing region concerning the graphical drawing instruction belongs* (0009, claim 14; claim 28; Kato teaches a determination unit that decides whether or not to executes a drawing operation. According to an instruction output from the controller, the determination unit renders a drawing instruction valid or invalid. Using the broadest interpretation, the Examiner concludes the output from the controller to include but not limited to a status of the output status flag for each determination region to which a drawing region concerning the graphical drawing instruction belongs.).

Therefore, at the time of the invention it would have been obvious to a person of ordinary skill in the art to combine Kato with Kunimasa in view of Nagoya for the benefit of providing an image processing apparatus, which allows user to select a mode for executing a drawing operation or a mode for not executing a drawing operation (0118).

Nagao teaches *wherein one page is divided into specific number of determination regions* (col. 5, lines 61-64; Nagao teaches a single page may be constituted by a plurality of regions.).

Therefore, at the time of the invention it would have been obvious to a person of ordinary skill in the art to combine Nagao with Kunimasa and Nagoya in view of Kato for the benefit of not executing unnecessary drawing instruction so that high speed and high quality drawing process may be enabled (col. 3, lines 32-34).

**In regard to dependent claims 54 and 66,** Kunimasa, Nagoya and Kato does not disclose expressly *the image formation apparatus according to claim 37, wherein the dividing unit divides the one page into the determination regions based on bands.*

However, Nagao teaches *the image formation apparatus according to claim 37, wherein the dividing unit divides the one page into the determination regions based on bands* (col. 1, lines 53-54; col. 5, lines 61-64).

Therefore, at the time of the invention it would have been obvious to a person of ordinary skill in the art to combine Nagao with Kunimasa and Nagoya in view of Kato for the benefit of reducing massive memory requirements, thus lowering the cost of memory accordingly (col.1, lines 44-47).

#### Note

It is noted that any citations to specific, pages, columns, lines, or figures in the prior art references and any interpretation of the reference should not be considered to be limiting in any way. A reference is relevant for all it contains and may be relied upon

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for all that it would have reasonably suggested to one having ordinary skill in the art.

See MPEP 2123.

**Claims 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunimasa and Nagoya in view of Nagao and further in view of Kato.**

**In regard to dependent claim 36,** Kunimasa and Nagoya in view of Nagao, does not disclose expressly *the image formation apparatus according to claim 30, wherein the output status flag indicates whether a certain graphical drawing instruction has been made valid for each graphical drawing instruction concerning an image for one page.*

However, Kato teaches *wherein the output status flag indicates whether the selection unit has already set a certain graphical drawing instruction valid for each graphical drawing instruction concerning an image for one page* (0009, claim 14; claim 28; Kato teaches a determination unit that decides whether or not to executes a drawing operation. According to an instruction output from the controller, the determination unit renders a drawing instruction valid or invalid. Using the broadest interpretation, the Examiner concludes the output from the controller to include but not limited to an output status flag that indicates whether the selection unit has already set a certain graphical drawing instruction valid for each graphical drawing instruction concerning an image for one page.).

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Therefore, at the time of the invention it would have been obvious to a person of ordinary skill in the art to combine Kato with Kunimasa and Nagoya in view of Nagao for the benefit of providing an image processing apparatus, which allows user to select a mode for executing a drawing operation or a mode for not executing a drawing operation (0118).

**In regard to dependent claim 37,** Kunimasa in view of Nagoya does not disclose expressly *the drawing processing method further comprising dividing one page into a desired number of determination regions, wherein the output status flag is provided in each determination region, and*

*the determining includes determining whether the drawing can be omitted based on the status of the output status flag for each determination region to which a drawing region concerning the graphical drawing instruction belongs.*

Nagao teaches *wherein one page is divided into specific number of determination regions* (col. 5, lines 61-64; Nagao teaches a single page may be constituted by a plurality of regions.).

Therefore, at the time of the invention it would have been obvious to a person of ordinary skill in the art to combine Nagao with Kunimasa in view of Nagoya for the benefit of not executing unnecessary drawing instruction so that high speed and high quality drawing process may be enabled (col. 3, lines 32-34).

Kato teaches *the output status flag is provided for each determination region, and the drawing omission determination unit determines whether the drawing can be omitted based on the status of the output status flag for each determination region to which a drawing region concerning the graphical drawing instruction belongs* (0009, claim 14; claim 28; Kato teaches a determination unit that decides whether or not to executes a drawing operation. According to an instruction output from the controller, the determination unit renders a drawing instruction valid or invalid. Using the broadest interpretation, the Examiner concludes the output from the controller to include but not limited to a status of the output status flag for each determination region to which a drawing region concerning the graphical drawing instruction belongs.).

Therefore, at the time of the invention it would have been obvious to a person of ordinary skill in the art to combine Kato with Kunimasa and Nagoya in view of Nagao for the benefit of providing an image processing apparatus, which allows user to select a mode for executing a drawing operation or a mode for not executing a drawing operation (0118).

**In regard to dependent claim 38,** Kunimasa in view of Nagoya does not disclose expressly *the image formation apparatus according to claim 37, wherein the dividing unit divides the one page into the determination regions based on bands.*

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However, Nagao teaches *the image formation apparatus according to claim 37, wherein the dividing unit divides the one page into the determination regions based on bands* (col. 1, lines 53-54; col. 5, lines 61-64).

Therefore, at the time of the invention it would have been obvious to a person of ordinary skill in the art to combine Nagao with Kunimasa in view of Nagoya for the benefit of reducing massive memory requirements, thus lowering the cost of memory accordingly (col.1, lines 44-47).

#### Note

It is noted that any citations to specific, pages, columns, lines, or figures in the prior art references and any interpretation of the reference should not be considered to be limiting in any way. A reference is relevant for all it contains and may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art. See MPEP 2123.

#### ***Response to Arguments***

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection. A new ground(s) of rejection is made in view of Kato, Kunimasa, Nagoya and Nagao.



***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James J. Debrow whose telephone number is 571-272-5768. The examiner can normally be reached on 8:00-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doug Hutton can be reached on 571-272-4137. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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